must be given to the great wealth of useful illustrations it contains. These include 396 figures and maps in the text, 48 plates with very beautiful photographs of scenery, &c., and two folding coloured maps. J. W. J.

THE PREHISTORIC EVOLUTION OF ITALY.

The Stone and Bronze Ages in Italy and Sicily. By T. Eric Peet. Pp. 528; maps and plates. (Oxford: Clarendon Press, 1909.) Price 16*s*. net.

THIS book gives a clear and exhaustive description of the results of the numerous excavations made by Italian archæologists and a critical discussion of the material obtained. The author succeeds in giving a remarkably complete record of the evolution of culture in Italy from the Palæolithic age down to the Iron age. In arriving at his conclusions he relies almost entirely on technological data, which, though of great value in determining the state of culture of the peoples with which he deals, are of much less value than the data of physical anthropology in solving racial problems. Large numbers of skeletons appear to have been discovered in the immense number of tombs that have been investigated by the Italian archæologists, but only in two or three cases does the author give us the measurements of these skeletons. As a result, many problems have to be left unsolved which with the assistance of physical data would apparently be easily soluble. For instance, a type of Neolithic pottery is found in a cave at Villafrati, in north Sicily, which differs from the Neolithic types found in other parts of the island, and has analogies with pottery found in certain neighbouring countries. The author is unable to decide whether this pottery was introduced by the immigration of a new race or by trade intercourse with foreign countries. He appears to have overlooked the important fact, mentioned by him in a footnote, that four skulls having an average index of 82·2 were found in the same cave as the new type of pottery. Knowing that the average index of the ancient Mediterranean race is 74–75, the physical anthropologist would have no hesitation in saying that the probability was immensely in favour of the new type of pottery being introduced into Sicily by the immigration of a new race.

The difference in the technique of the Neolithic implements and pottery in north and south Italy leads the author to the conclusion that the populations of these regions were two branches of the Mediterranean race who arrived in Italy by different routes. The southern branch almost certainly came by sea from Crete; about the route of the northern branch there is not the same certainty. Towards the end of the Neolithic period, pottery of the "dolmen" type appeared in south Italy, north Sicily, and Sardinia, and superseded the older types.

In the period coming after the Neolithic, which the author, following the Italian archæologists, calls the Eneolithic period, copper makes its appearance alongside of stone. The rock-hewn tomb is introduced in south Italy and Sicily, and a great advance takes place in the technique of stone implements. Several new types of pottery appear. One of these is distinctly Ægean, so there can be no doubt that there was trade intercourse in the Eneolithic period between Crete and south Italy and Sicily.

A remarkable type of pottery occurs in the early Eneolithic period in south-west Sicily in association with rock-hewn tombs. The ornamentation consists of rectilinear patterns painted in black on a ground of "white slip," with which the clay pot is coated. The distribution of this pottery is interesting; it is not found in Crete, but it has been found in Thessaly and in other parts of north Greece; fragments have also been found at Molfetta, in Apulia, south Italy. It looks, therefore, that there was a second route of trade or of migration from the east, across north Greece, the Adriatic, and south Italy to Sicily, which is quite distinct from the Ægean sea route along which the greater part of the trade of south Italy with the east, passed.

The author leans to the view that the great cultural changes of the Eneolithic period were not due to the immigration of a new race, but to foreign influence. Measurements of skulls found associated with the "painted white slip" ware might possibly change this opinion. The average cephalic index of four skulls found at Castelluccio with this ware was 77·9, which looks significantly higher than that of the Mediterranean race.

The Bronze age in Italy is treated topographically. A very painstaking and up-to-date description is given of the material found in the lake dwellings, in the Terremare, and in Bronze-age hut-settlements and caves of north Italy. Chapters are then devoted to the Bronze age in south Italy, and to the Bronze age in Sicily and Sardinia.

In a chapter on the racial problem, the author deals with the racial affinities and origins of the peoples who introduced bronze into Italy. There are two theories in the field, that of Brizio and that of Pigorini. The author favours the latter. According to Pigorini's theory, the hut villages and caverns of the Neolithic age in north Italy were inhabited by a dolichocephalic race (called usually *Ibero-Liguri*) who inhumed their dead. At the end of the Neolithic period a new race appeared in north Italy which cremated its dead. This race planted the first lake dwellings in Lombardy. In the full Bronze age another branch of the same race invaded the eastern district of north Italy, and planted the lake dwellings of the Veneto and the Terremare of Emilia. At the end of the Bronze age, part of the new people crossed the Apennines and entered Tuscany and Latium. This new people Pigorini calls the *Italici*. He considers that they were of the same race as the Swiss lake dwellers, and therefore probably brachycephalic. There is no direct evidence of this, as cremation was an invariable burial custom among the Italian like dwellers and the Terremare folk.

The volume is well printed, contains many excellent illustrations, and four valuable maps showing the distribution of sites in the Neolithic, Eneolithic, and Bronze ages. No student of the prehistory of man in Italy, or indeed in Europe, can dispense with read-

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ing this volume. It is, we believe, the first treatise in English which has fully utilised the remarkable archæological discoveries of the last decade in Mediterranean countries, and the author is to be congratulated on the thoroughness and ability with which he has accomplished his task. J. G.

BOTANICAL PHOTOGRAPHS.

Vegetationsbilder. Seventh series. Parts iii. to viii. Part iii., Der nördliche Schwarzwald, by Otto Feucht; part iv., Vegetationsbilder aus Dalmatien, by L. Adamović; part v., Charakterpflanzen des abessinischen Hochlandes, by Felix Rosen; parts vi. and vii., Pflanzenformationen aus Ost-Bolivia, by Th. Herzog; part viii., Vegetationsbilder aus Dänisch-Westgrönland, by M. Rikli. Price 4 marks, each part containing 6 photographs. Edited by Prof. G. Karsten and Prof. H. Schenck. (Jena: Gustav Fischer, 1909–10.)

THIS unique botanical publication is being continually extended, so that a seventh series is now completed. The first double part of the volume, dealing with the colonisation of volcanic lands in Java and Sumatra, has been previously noticed. The third part is devoted to the vegetation of the northern area of the Black Forest, which is characterised by its coniferous trees and moorland. A typical bit of high moor shows bushes of *Pinus montana*, clumps of *Scirpus caespitosus* and tufts of *Juncus squarrosus*. On another plate the same pine is seen as a tall tree, contrasting with the adjacent Scots pine and spruce. The author has also been very successful with his representations of the two subalpines, *Andromeda polifolia* and *Athyrium alpestre*, and of the umbellifer, *Meum athamanticum*. Dr. L. Adamović has brought together a most attractive set of photographs from the sunny climate of Dalmatia. They illustrate a strip of shore and rocks of the littoral, sublittoral and montane regions. So carefully have the spots been chosen and the photographs taken that the author can point out most of the individual plants. Especially charming is the first plate, showing *Aster Tripolium* with species of Statice and *Inula crithmoides* on the shore, and the second picture of sublittoral rock where *Dianthus dalmaticus* and *Iris germanica*, with other plants, are easily recognised. Trees provide the chief feature of the views on the Abyssinian plateau. The rosaceous plant *Hagenia abyssinica*, which tardily assumes its arboreal shape, is very striking; the unripe fruits are esteemed by the natives as a valuable specific for internal complaints. A fine specimen of tree Euphorbia is depicted, which the author suggests may have developed an arboreal form when it passed from a dry to a moist climate. Even more singular is the tree Lobelia, formerly known as Rhynchopetalum. Illustrations are also given of a huge spreading Ficus and a tree Entada.

Dr. Th. Herzog has provided a fine double part relating to the remote territory of East Bolivia. Along the Paraguay, on savannah land subject to inundations, is the home of the wax palm, *Copernicia cerifera*, where it is associated with tall grasses, species of Paspalum and Andropogon. Another plate represents the growth of the palm *Acrocomia Totai*, on the sandstone highlands of Chiquitos. A "monte" or thicket formation occurs on parts of the plain of the Rio Grande, where thorny scrub and succulents predominate; the plates depict species of Cereus, a Trithrinax and the bromeliad *Aechmea polystachya*, which last is valuable to travellers, as it generally holds a store of water. Other palms selected for illustration are *Orbignya palmata* and *Mauritia vinifera*, typical of the savannahs, *Astrocaryum Chonta* and *Iriartea exorrhiza*, denizens of the rain forests; Iriartea produces remarkable thorny prop roots. The last two plates portray succulents, of which *Pilocereus celsianus* is the most striking, on account of its silvery crown of hairs.

The concluding part contains some typical aspects of vegetation in Danish West Greenland. In the southern area birches alone attain to the height of trees as seen in the first plate; the second indicates the importance of *Salix glauca*. A brilliant photograph of an Arctic meadow would be better appreciated if a key to the plants had been supplied. There is an effective photograph of cotton-grass growing by the edge of a lake, and another of clumps of *Glyceria distans* which attract attention on account of the peculiar lie of the stems.

MAGNETIC CHARTS.

Magnetische Kartographie in historisch-kritischer Darstellung. By G. Hellmann. Veröffentlichungen des Kg. Preuss. Meteorologischen Instituts, Abhandlungen, Bd. iii., Nr. 3. Pp. 61. (Berlin: Behrend and Co., 1909.) Price 6 marks.

DR. G. HELLMANN, as head of the Prussian Meteorological Institute, which controls the magnetic observatory at Potsdam, and as a lover and collector of antique magnetic literature, is conspicuously qualified for the work he has undertaken in the present volume. It aims at giving a complete list of all magnetic charts of any importance. All time prior to the year 1700 is regarded by Dr. Hellmann as preceding the era of charts, but he devotes a few pages to Columbus and other pioneers, whose work relates to the discovery that the magnetic needle is usually inclined to the geographical meridian.

Time since 1700 is divided into two periods. The first, extending until 1835, was heralded in by the famous chart of Halley; it is briefly discussed on pp. 10–11. The second period, extending from 1835 to the present day, saw the introduction of magnetic surveys on land.

The earliest work of this kind, according to our author, took place in England on the initiative of the British Association. On pp. 11–17 there is an enumeration of all the principal land surveys; while pp. 18–27 summarise the present state of our knowledge of the distribution of the magnetic elements. There is a useful list on p. 26 of the epochs of the principal surveys since 1891, with particulars as to the number and density of distribution of the stations. A number of propositions are laid down in pp. 28–29 as to the objects to be aimed at in magnetic surveys and other work preliminary to the construction of

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